25X1 [redacted]

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INFORMATION REPORT

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SUBJECT : Organization of Zavod #1, Podberesje, USSR

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This is the seventh report [redacted] and further exploitation is being conducted. Requests for further information can be accepted. 25X1A

25X1A

General

1. [redacted] German engineers and technicians formerly employed by Junkers, Siebel, and Heinkel were taken to Podberesje to set up and operate an aircraft development plant. The personnel at this plant (Zavod #1) were divided into two groups - Junkers and Soviet personnel in one group (OKB-1), and Siebel, Heinkel, and Soviet technicians in the other group (OKB-2). The total labor force was about 3000-3500. In addition to the 365 Junkers and 192 Siebel and Heinkel technicians, the total figure includes plant maintenance groups, security police, party organizations, and company operated stores. All of the equipment and machinery was taken from the former Junkers, Dessau and Siebel, Halle plants. 25X1A /See Report No [redacted] for a description of Zavod #1 and a list of the machinery which was transported from the Junkers and Siebel plants./

Soviet Administration

2. Both Siebel and Halle groups were under the supervision of a Soviet Plant Director who was responsible to the Deputy Minister for Aircraft Industry in Moscow. /See Enclosure (A), a chart which shows how the plant and the Air Ministry are connected./ It is to be noted that the Plant Director reported directly to the Air Ministry and not through the Central Institute of Aerodynamics and

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25X1A

25X1A Hydrodynamics (ZAGI). There were three plant directors during my stay at Zavod #1: Abramow [redacted]
25X1A Rebenko [redacted] and V V Smirnow*(February [redacted] Jurschin, an MVD man, was in charge of plant security and was chief of Department 47. The Director's Administrative Staff, under Birukow, directed purchasing, payroll, accounting, and other plant administrative matters. Wosnizenski, the Chief Engineer, advised the Plant Director on technical matters. He was the superior of both Junkers and Siebel Chief Designers, but did not actually direct the design work in either OKB-1 or OKB-2.

Junkers (OKB-1) and Siebel (OKB-2) Development Groups

3. It is extremely difficult to present an organization chart that would be completely accurate at any given time. Personnel at Zavod #1 were continually transferred as dictated by the work load in different departments. Furthermore, when the Soviets felt that Soviet workers had acquired sufficient experience, they began to combine departments and to take over jobs formerly occupied by Germans. [redacted] Soviets were made 25X1A nominal chiefs of the Tool Design Section and all of the shops. They also completely took over certain other departments, notably Flight Test. /In general, this report describes the organization of the plant as it existed at the time Source left the USSR in September 1950. An exception is made, however, in the case of the Germans who were chiefs of the various departments. To call attention to these key personnel, they are shown in their most important capacity - one which they may or may not have been
25X1A holding as late as [redacted] Transferral of German chiefs is so stated in this report, under the appropriate department./ The Junkers and Siebel Groups each worked independently on their design projects, but they shared most of the facilities for shops and laboratories. Design and production methods and procedures were the same for both groups, but since the Siebel (OKB-2) operations were less extensive, some of their design sections were combined. The authority of both the German and Soviet management of the departments varied from complete to only administrative control. /Deviations from the direct chain of command are described in the text of this report and indicated by broken 25X1A lines on the organization chart, Enclosure (B). For convenience in referencing, names and department numbers were assigned by participating USAF specialists, [redacted] These department numbers are purely arbitrary. The English names are those which may be used for comparable departments in US aircraft factories. Estimates of the number of people employed are given for the OKB-1 Group; this was not attempted for OKB-2 except, that where the departments were combined, the estimate is given for the entire shop. In most of the OKB-2 design sections, the status of Soviet personnel was unknown [redacted] 25X1A

Department 1: Chief Designer's Office (Chefkonstrukteur)

Responsible for the entire design and construction of new aircraft which included all research, design, testing and building of prototypes. Airplane design and tooling drawings were made for series production aircraft but there was no mass production of aircraft at Podberesje. OKB-1 and OKB-2 were completely separate in this office.

/* See footnote on Enclosure (A)/

 25X1A [redacted]

OKB-1 Personnel:

Baade, Brunolf - Dipl Eng (Chief)
Obrubow (Soviet Deputy)
Bohm, Miss Helga (Secretary)
Schoenemann, Miss Inge (Secretary)

OKB-2 Personnel:

Roessing, Hans-Heinz - Eng (Chief)
Beresniak (Soviet Deputy)
Becker, Mrs Herta (Secretary)

Department 2: Deputy Chief Designer's Office (Stellvertretender Chefkonstrukteur)

Assisted the Chief Designer and, in his absence, was the the Acting Chief. These OKB-1 and OKB-2 offices were separated.

OKB-1 Personnel:

Freytag, Fritz - Eng

OKB-2 Personnel:

Heinsohn - Eng (Also Chief of Department 15, OKB-2)

Department 3: Special Assistant to the Chief Designer (Assistent des Chefkonstrukteurs) 25X1A

[redacted]

OKB-1 Personnel:

Uhl, Heinz - Eng
(no other personnel)

OKB-2 Personnel:

Wilmsen, Paul - Eng (Also directed work of Department 6 of the Siebel Group, through its chief, Koehn)
(no other personnel)

Department 4: Technical Liaison Office (Technisches Verbindungsbuero)

This office was responsible for coordinating the work of the design offices and the various shops and laboratories. It assisted the shop personnel by explaining ideas of the designers and helped in the interpretation of drawings. This office expedited design changes and helped in setting up means whereby damaged parts could be salvaged. The Chief Liaison Engineer was present at the preliminary design discussions, but the real work of the office did not begin until the first detail design drawings of a plane were completed and the shop started work on the parts. The

liaison engineers worked on any problem of all airplanes. One exception was Goretski, who usually was the liaison man assigned to Flight Test because of his fluency in Russian, in addition to his technical capabilities.

OKB-1 Personnel:

Uhl, Heinz - Eng (Chief)
Goretski, Heinz - Eng
Cottin, Karl - Eng (My successor)
Lange, Karl - Eng
Lueneburg, Werner - Eng
Winkler, Fritz - Eng
No Soviets

OKB-2 Personnel:

No comparable department.

Department 5: Translation Office (Dolmetscherbuero)

This group supplied interpreters as required, and was responsible for all Soviet and German translations including reports, correspondence, and notes on drawings, if necessary. Obrubow, Soviet Deputy Chief Designer, proofread translated reports. Beresniak probably proofread Siebel reports, but this is not definitely known.

OKB-1 Personnel:

Uhl, Heinz (Chief) - Eng
Marks, Bruno - Eng
von Schlippe, Xenia
Heisler, Nelly
Thiel, Erika
Scheller, Inge (Secretary for Departments 3, 4, and 5)
Hartz, Bruno (Temporary)
von Schlippe, Georg (Temporary)
von Schlippe, Wladimir (Temporary)
No Soviets

OKB-2 Personnel:

Siebel did not have a special department for this kind of work. Translation was done by the OKB-2 Chief Designer's Secretary, Mrs Becker, and by a design engineer, Waldemar Peltzer.

Department 6: Planning Office (Planung)

Supervised Departments 7, 8, 9 and 43 until the Soviets took over Department 43. In the Siebel Group, these offices were combined, but were separated from the OKB-1 Groups.

OKB-1 Personnel:

Mindach, Boris - Eng (Chief)
No Soviet Deputy
Moosbach, Miss Edith (Secretary)
One Soviet, name unknown

OKB-2 Personnel:

Koehn, Gerhard - Eng (Chief, but under direct supervision of Wilmsen, Department 3)
Hauber - Eng
Total Number unknown.

Department 7: Engineering Schedule (Plannungsbuero)

This office was responsible for scheduling and following up design and drafting work to meet a specified completion date. They also had the authority and responsibility for transferring engineering personnel from one department to another to meet schedules.

OKB-1 Personnel:

Bonin, Peter - Eng (Chief)
No Soviet Deputy
Huth, Otto - Eng
Riedel, Miss Irmgard (Clerk)
2 Soviets - Names unknown

OKB-2 Personnel:

See Department 6

Department 8: Engineering Administration (Verwaltung)

This office was responsible for general administration, such as payment of salaries and procurement of drafting equipment, office supplies, furniture, etc. Although this group paid the salaries, timekeeping was under the control of the Soviet Administrative Staff.

OKB-1 Personnel:

Schumacher - Eng (Chief)
No Soviet Deputy
Reusz, Mrs Anna (Paymaster)
2 Soviets - Names unknown

OKB-2 Personnel:

See Department 6

Department 9: Material Planning Office (Material Planung)

This office was responsible for ordering all raw materials and parts; actual procurement was handled by the Soviets. This office had more troubles than any other due to the numerous material substitutions. In fact, Beyer became very ill as a result of the nervous strain.

OKB-1 Personnel:

Beyer, Paul - Eng (Chief)
Nefflin, Miss Hildegard (Secretary)
Barnewald - Eng
Koelling
Voelker, Bruno
No Soviets

OKB-2 Personnel:

See Department 6

Department 10: Preliminary Design Office (Entwurfsbuero)

This office was responsible for preliminary design of new aircraft and the preparation of the handbooks (Projekt Mappe) which included preliminary design drawings and performance requirements. This office, with Department 22, was jointly responsible for the preparation of aircraft maintenance handbooks. The Preliminary Design Office also supervised Departments 11 and 12. I do not know whether Departments 10, 11 and 12 in the Siebel Group were combined. Motzfeld and Schmitz were key men but I do not know what their titles were.

OKB-1 Personnel:

Wocke, Hans - Dipl Eng (Chief)
No Soviet Deputy
Stechert, Miss Inge (Secretary)
Mix - Dipl Eng
Backhaus - Dr Eng
Lehmann - Dipl Eng
Wacht - Eng
2 Soviets - Names unknown

OKB-2 Personnel:

Guenther, Siegfried - Dipl Eng (Chief)
Benz - Dipl Eng
Scherer, Fritz - Dipl Eng
Motzfeld - Dr Eng
Schmitz - Dr Eng
Becker, Werner - Dipl Eng
Eulitz - Eng
Fuchs - Dipl Eng
Thiedemann - Dr Eng
Sander - Dr Eng
Dietze, Fritz - Dipl Eng
Butter, Karl - Eng
Total Number Unknown

Department 11: New Aircraft Design (Entwurfszeichnungsbuero)

This office worked on the design of new aircraft until the Soviets approved the plans for detail design. They were also jointly responsible with Stress (Department 14) for air load calculations.

OKB-1 Personnel:

Grolle, Herbert - Eng (Chief)
No Soviet Deputy
Schmidt-Stiebitz, Hermann - Eng
Schrecker, Martin - Eng
Kornmueller - Dipl Eng
3 Soviets - Names Unknown

OKB-2 Personnel:

See Department 10

Department 12: Aerodynamics Unit (Aerodynamik)

Responsible for the aerodynamic design of new aircraft and jointly responsible with Flight Test (Department 29) for flight test analysis and reporting.

OKB-1 Personnel:

Schumann, Hans-Georg - Dr Eng (Chief)
Schreiber, Walter - Eng
No Soviets

OKB-2 Personnel:

See Department 10

Department 13: Project Engineering Office (Typenleitung)

After a new project had been approved by the Soviets and the detail design started, a project engineer was assigned by the Chief Designer, Baade, after consultation with Erich Wolf. The Project Engineer was then responsible for the procedures in design and production although he did not give direct orders to the men doing the work.

OKB-1 Personnel:

Wolf, Erich - Eng (Chief) (Also Project Engineer on EF-131 and 140)
Wolff, Fritz - Eng EF-131 and EF-140
Wessel, Erich - Eng EF-126
Theobald, Jakob - Eng EF-132; EF-150 (Had been in Dept 20 as Chief Designer on the EF-150 Servo Mechanism)
Rentel, Rudi - Eng (Former ME 162 Design Chief with Messerschmidt)
Schreiber, Heinz (Former Test Pilot)
No Soviets

OKB-2 Personnel:

No comparable department

Department 14: Stress Analysis and Weight Control (Statik und Gewichte)

Two groups worked in this section under the direction of one chief. One group was responsible for the calculation and reporting of stress analysis and the other handled weight calculations. There was considerable argument between the two groups; however, the chief tried to be impartial. If there was a wide difference of opinion, a structural test was run. The Stress engineers also worked with Department 11 on air load calculations, and with Sections 23, 24, 29 and 40 on static and vibration problems in OKB-1. This group had more German engineers than any other section but this was largely due to coincidence and poor planning on the part of the Soviets at the time of the "transfer" from Dessau. All those listed for OKB-1 were stress specialists unless otherwise indicated. The jobs which the OKB-2 personnel held are not known to me.

OKB-1 Personnel:

Guenther, Waldemar - Eng (Chief)
Feofanow (Soviet Deputy)
Eltz, Miss Rita (Secretary)
Aickele, Karl - Dipl Eng
Walzel - Dipl Eng
Paasch, Fritz (Fredrich?) - Eng
Besinger, Josef - Eng
Mattern, Otto - Eng
Gottschalk, Siegfried - Eng
Lammel - Eng
Kuregger - Eng
Bordihn - Eng
Schreyer - Eng
Heineck - Eng (Died April 1951)
Emmer - Eng
Hildebrandt - Eng (Weights)
Bergmann - Eng
Wulf - Dipl Eng
Weygand - Dipl Eng
Koscielny, Guenther - Eng
Steinhardt, Johannes - Dipl Eng
2 Germans - Names Unknown
5 Soviets - Names Unknown

OKB-2 Personnel:

Heinze - Eng (Chief)
Scholz, Rudolph - Eng
Machill, Hans - Dipl Eng
Neumann - Eng
Weber - Eng
Neumann - Eng (Different engineer; not duplication of name above)
Walter - Eng
Michalek - Eng
Sparrer - Eng
Total number unknown

Department 15: Fuselage Design (Rumpfkonstruktion)

This office, in OKB-1, was responsible for all of the fuselage design, and supervised Departments 15 a, b, and c. In OKB-2, fuselage (15), wing (16), armament (19) and servo mechanisms (20) were under Heinsohn, [redacted] if any, subdivisions existed. 25X1A

OKB-1 Personnel:

Hasselloff, Johannes - Eng (Chief)
Soviet Deputy - Name Unknown
Esther, Hermann - Eng

OKB-2 Personnel

Heinsohn - Eng (Chief) (Also Deputy Chief Designer, Dept 2)
Luksch, Miss Dora (Secretary)
Noetzold, Martin - Eng
Peltzer, Waldemar - Dipl Eng
Christien - Eng
Luksch - Eng
Balluff - Eng
Jacob - Eng

Borchert - Eng
Mehl - Eng
Hellriegel - Eng
Kapel, August - Eng
Bold - Eng
Schurz, Edwin - Eng
Knoll - Eng
Rheinlaender - Eng
Schroeer - Eng
Haul - Eng
Total Number Unknown

Department 15a: Fuselage Forward Section (Fuehrerraum)

This group was responsible for the equipment in the cockpit as well as the design of the forward fuselage structure.

OKB-1 Personnel:

Stiller, Fritz - Eng (Chief)
No Soviet Deputy
Scheller - Eng
Markwardt - Eng
4 Soviets - Names Unknown

OKB-2 Personnel:

See Department 15

Department 15b: Fuselage Center Section (Rumpfmittelstueck)

This group was responsible for the structural design of the center fuselage section of the airplane. They worked with Section 19 on bomb bay doors. RATO installations were also handled by this department.

OKB-1 Personnel:

Wolf, Kurt - Eng (Chief)
No Soviet Deputy
Stechert, Hans - Eng
Kraemen - Eng
Schurz - Eng
Woehrle, Wilhelm - Eng
Mueller, Paul - Eng
Blumel - Eng
Freckmann, Josef - Eng
Schloszer, Max - Eng
Hadamczek - Eng
Sattler - Eng
Wild, Manfred - Draftsman
Tuchel, Miss Marga - Draftsman
Gerngross, Miss Elfriede - Draftsman
1 German - Name Unknown
6 Soviets - Names Unknown

OKB-2 Personnel:

See Department 15

Department 15c: Fuselage Aft Section (Rumpfende)

These people were responsible for the structural design of the aft fuselage section except for the empennage, which was designed by Department 16b.

OKB-1 Personnel:

Riedel - Eng (Chief)
No Soviet Deputy
Stebel - Eng
Scholz - Eng
Wieners - Eng
Nebel - Eng
1 German - Name Unknown
4 Soviets - Names Unknown

OKB-2 Personnel:

See Department 15

Department 16: Wing Design (Fluegelkonstruktion)

Supervised and was responsible for the work of Departments 16 a, b, c, and also d, until the Soviets took over Lofting in September 1948.

OKB-1 Personnel:

Freundel, Fritz - Eng (Chief)
Soviet Deputy - Name Unknown
No other Soviets

OKB-2 Personnel:

See Department 15

Department 16a: Wing Structure (Fluegel)

This group designed wing structure but no flaps and ailerons. They also worked on the main gear attachments in conjunction with Dept 16 c and tank support structure with Department 17 b.

OKB-1 Personnel:

Strobel, Franz - Eng (Chief)
No Soviet Deputy
Krause - Eng
Wingerter, Oskar - Eng
Kober - Eng
Richter - Eng
Wreth - Eng
Glaser, Kurt - Eng
Mueller, Miss Ursel - Draftsman
Nickell, Miss Edith - Draftsman
1 German - Name Unknown
5 Soviets - Names Unknown

OKB-2 Personnel:

See Department 15

Department 16b: Empennage Structure (Leitwerk)

This group designed the complete empennage, ailerons, and landing flaps. They coordinated closely with Departments 16a and 15 c.

OKB-1 Personnel:

Hartmann - Eng (Chief)
No Soviet Deputy
Kletsch, Max - Eng
Zerressen, Paul - Eng
Bernhard - Eng
Rabbold, Ernst - Eng
2 Germans - Names Unknown
5 Soviets - Names Unknown

OKB-2 Personnel:

See Department 15

Department 16c: Landing Gear (Fahrwerk)

Wheels, tires, bearings, and forgings were purchased; landing gear design was done by this department.

OKB-1 Personnel:

Reusz, Fritz - Eng (Chief)
No Soviet Deputy
Zscyska, Paul - Eng
2 Germans - Names Unknown
4 Soviets - Names Unknown

OKB-2 Personnel:

See Department 15

Department 16d: Lofting (Strakabteilung)

This group made accurate wing and fuselage profile lay-outs on metal and on a World War II-developed German plastic known as "Astralon". Zimmermann was Chief until the Soviets took over the section in September 1948; he was then transferred to Department 16a of OKB-1. By the time Zimmermann was transferred, the Soviets had had sufficient experience to enable them to do very accurate lofting work. This department did work for both OKB-1 and OKB-2.

OKB-1 Personnel:

Zimmermann, Paul (Chief) - Eng
Soviet Deputy - Name Unknown
8-10 Soviets - Names Unknown (all women)

Department 17: Power Plant and Hydraulics (Triebwerkskonstruktion)

The department organization in OKB-1 (Junkers) was unusual in that there were two department chiefs, jointly responsible to the Chief Designer. By mutual agreement, DuBois supervised fuel and hydraulic systems and Hoch followed power plant installations and engine control design. Each was considered to be equally well

qualified to direct any work in Departments 17a, b, or c. In OKB-2, these departments were combined under one chief and worked on the design and testing of liquid rocket engines. Hydraulics for OKB-2 may have been organized like OKB-1, or may have been handled by the people listed under Department 15.

OKB-1 Personnel:

Hoch, Hans - Eng)
DuBois, Georg - Eng) ——— (Chiefs)
Soviet Deputy - Name Unknown; no other Soviets
Kappe - Eng

OKB-2 Personnel:

Schell - Eng (Chief)
Stahl, Mrs Lore (Secretary)
Ufer - Eng
Stahl, Richard - Eng
Michel - Eng
Reck - Dipl Eng
Michaelis - Dipl Eng
Mueller - Eng
Kuenzel - Eng
Kaul, Werner - Eng
Winter, Kurt - Eng
Schenk, Werner - Eng
Total Number Unknown

Department 17a: Hydraulic Systems (Hydraulik)

With the exception of servo mechanisms, this group designed the entire hydraulic system on the airplane, including pumps, valves, and actuating cylinders. In OKB-1 servo mechanisms were designed by Department 20. In OKB-2, servo mechanism design was handled by some of the people listed under Department 15.

OKB-1 Personnel:

Antoni - Eng (Chief)
Soviet Deputy - Name Unknown
Haas, Walter - Eng
Pansegrau - Eng
Hainich - Eng
Busse - Eng
Horn, Miss Elizabeth - Draftsman
Busse, Miss Elfriede - Draftsman
Ulrich, Miss Anneliese - Draftsman
3 Soviets - Names Unknown

OKB-2 Personnel:

See Department 17

Department 17b: Fuel Systems (Kraftstoffanlage)

This group was responsible for the entire aircraft fuel system, including fuel tanks, pumps, lines, and gauges.

OKB-1 Personnel:

Goerisch, Werner - Eng (Chief)
No Soviet Deputy
Bonse, Ludwig - Eng

Krieger, Otto - Eng
Schlosser, Rudi - Eng
Koenig, Miss Waltraut - Draftsman
3 Soviets - Names Unknown

OKB-2 Personnel:

See Department 17

Department 17c: Engine Installations (Bedienanlage)

This group designed the engine installation, cowling, and controls. Engine design work was done by OKB-2 but not by OKB-1. The Junkers preliminary designers (Department 10) would request an engine of a certain rating from the Soviets and if it was not available, would inquire as to what could be furnished. The engine manufacturer would furnish information necessary for installation design work.

OKB-1 Personnel:

Kuehne, Richard - Eng (Chief)
No Soviet Deputy
1 German - Name Unknown
2 Soviets - Names Unknown

OKB-2 Personnel:

See Department 17

Department 18: Electrical Installations (Elt-Abteilung) (Electrische Anlagen)

Responsible for all electrical installations and components, including radar, electronic computers, intercommunications, electrical instruments, and electrical actuators. In OKB-1, a branch under Rinke's direction worked with electrical instrumentation and control devices for laboratory and flight testing. In OKB-2, in addition to working on aircraft designs, part of the group was working on some kind of electronic research. I heard that this work was in a field similar to radar, but I have no further details. Very strict security was observed in connection with this work.

OKB-1 Personnel:

Nagel, Otto - Eng (Chief)
Simkin - Soviet Deputy
Lehmann, Bruno - Dipl Eng
Rinke, Fridolin - Eng
Keck, Alfred - Eng
Heiman, Rudi - Eng
Zindel, Wendolin - Eng (Former Heinkel employee)
Busse, Wolfgang - Technician
Goersch, Paul - Eng
Killian - Eng
Kraemer - Technician
5 Soviets - Names Unknown

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OKB-2 Personnel:

Wehde (or Whede) Dr Eng (Chief)
Horn, Miss Annerose (Secretary)
Scheil - Eng
Szappat - Eng
Brandel - Eng
Stegk - Eng
May, Ernst - Eng
Zuehlke - Technician
Stegk, Edel - Technician
9 Germans - Names Unknown
4 Soviets - Names Unknown

Department 19: Armament (Bewaffnung)

In OKB-1, this group did all gun installation and turret design work, but no work on the guns themselves. The guns were supplied by the Soviets. Department 19 was responsible for all adjustments and tests either on the airplane or in the laboratory, but no tests were conducted in which the gun installations were tested by actual firing of the guns. Bomb racks and bomb release mechanisms were also this group's responsibility. No rocket armament installations were planned for any airplane built at Podberesje. There was no armament on the one Siebel plane built at Zavod #1 (for description of this plane see Report No [redacted] 25X1A 25X1A [redacted] 7. I have no information on Siebel designs that were not built at Podberesje.

OKB-1 Personnel:

Steuerlein, Gustav - Eng (Chief)
Kuljawzew - Soviet Deputy; handled procurement of guns
Gremser - Eng
25X1A Bock, Max - Eng [redacted]
Koenig - Eng
2 Soviets - Names Unknown

OKB-2 Personnel:

See Department 15

Department 20: Hydraulic Servo Mechanisms (Sonderaufgaben)

Part of the OKB-1 Section was responsible for the design of hydraulic servo mechanisms used on flight surface controls and on the FA-15 gun turret system. Another section under Handke worked on optical bomb and gun sighting systems. They worked very closely with the Hydraulics Laboratory (Department 28) and with the Armament Department. In the Siebel Group, this work was done by some of the personnel listed for Department 15.

OKB-1 Personnel:

Heisig, Josef - Dipl Eng (Chief)
Handke, Erwin - Eng (Former Zeiss employee; an optics expert)
Rockstron, Rudi - Eng
Bruske, Erwin - Eng
Weiche - Eng
Riek - Eng
10 Soviets - Names Unknown

OKB-2 Personnel:

See Department 15

Department 21: Fire Extinguisher Systems (Feuerloeschanlagen)

This section concerned itself with the design and testing of aircraft fire extinguishing systems. Stegbeck and von Schlippe were the inventors of the system used on the Junkers airplanes. In the latest design, extinguishing agent (carbon tetrachloride) could be discharged repeatedly from the same bottle. The method of pressurizing the bottles is unknown. There was no comparable section in OKB-2.

OKB-1 Personnel:

von Schlippe, Boris - Dipl Eng (Chief)
Stegbeck, Helmut - Dipl Eng
Bergold, Alfred - Eng
Ballerstedt - Dipl Eng
Naumann - Foremen (Obermeister)
Herling, Paul - (Former Flight Testing Mechanic)
No Soviets

OKB-2 Personnel:

No comparable department

Department 22: Handbooks (Druckschriftenstelle)

This group, in collaboration with Preliminary Design (Department 10), wrote, illustrated and published handbooks for pilot instruction, maintenance, etc.

OKB-1 Personnel:

Kindler, Lothar - Dipl Eng (Chief)
No Soviet Deputy
Steib - Eng
2 Soviets - Names Unknown

OKB-2 Personnel:

No comparable section

Department 23: Static Test Engineering (Bruchversuche)

Due to the complexity and large number of engineering problems involved in static testing, a special group of engineers was set up in the Junkers Group to design the test jigs, to supervise the tests, and to write reports on tests requested by Department 14 (Stress).

OKB-1 Personnel:

Kahofer, Richard - Dipl Eng (Chief)
No Soviet Deputy
Gromes, Friedrich - Eng
Steidle, Anton - Eng
Wittkemper - Eng
Jasper - Eng
2 Germans - Names unknown
2 Soviets - Names unknown

OKB-2 Personnel:

This work was performed by the Stress personnel in Dept 14.

Department 24: Vibration Test Engineering (Schwingungsabteilung)

This group in OKB-1 was responsible for running shake tests on the complete airplane and analyzing the results in conjunction with Section 14. They assisted the flight test group in making vibration analyses and also worked with the Static Test Lab on vibration tests, e g, the test of the flight control linkage. In OKB-2, this work was performed by Dr Thiedemann, Dr Sander, and Fritz Dietze of Department 10.

OKB-1 Personnel:

Schmidt, Theo - Eng (Chief)
Koeppen - Dipl Eng
Wild - Eng
Raff, Richard
Schilling, Siegfried
Thiehle, Miss Gisela (Calculator)
No Soviets

OKB-2 Personnel:

No comparable department

Department 25: Wind Tunnel (Windkanal)

This was a self contained unit and even included a shop which made models both for use in the tunnel at Podberesje and in the tunnels operated by ZAGI in Moscow. ZAGI was rumored to have eight tunnels. This group conducted and evaluated wind tunnel tests on all airplanes designed by Junkers and Siebel engineers. They maintained very close contact with the Aerodynamics Section (Department 12). For a description of the tunnel, see Report No [redacted]

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OKB-1 Personnel:

Strauss, Kuno - Dr Eng (Chief)
Dominik, Hans - Eng
Wenzlau, Alfred - Eng
Hempel - Eng
Kleinschmager
Matzke
Tuchel, Horst
No Soviets

Department 26: Production Engineering (Fertigungs-Entwicklung)

These people worked on production processes and designed templates tools, dies, form blocks, and assembly jigs used in the plant at Podberesje. They also made complete tooling drawings for series

production which the Soviets took along with the final drawings of the airplane. Although there were two groups, Griebsch was in charge of both. He approved all drawings from both groups.

OKB-1 Personnel:

Griebsch, Franz - Eng (Chief)
Lasarew - Soviet Deputy
Riek, Ernst - Eng
Warnck - Eng
Walkenbach, Theo - Eng
Fischer - Eng
Westerhelweg - Eng
Blank - Eng

OKB-2 Personnel:

Stolberg, Gerhard - Eng (Chief of OKB-2, but under the supervision of Griebsch).
Thomsen - Eng
Gerasch, Karl - Eng
Zuhlke, Paul - Eng
Foelibach - Eng
11 Soviets - Names Unknown (worked for both groups)

Department 27: Materials Testing Laboratory (Material Pruefungs-Laboratorium)

The three groups in this laboratory were responsible for testing the physical properties of materials, conducting corrosion resistance tests, and for the repair and calibration of instruments used in the shops. This laboratory conducted tests for both Siebel and Junkers groups.

OKB-1 Personnel:

Eitner, Heinz - Dipl Eng (Chief)
No Soviet Deputy
Schroeder, Rolf - Eng
Haeberle, Eng
Tiehle - Eng
Maedebach - Eng
Geertz, Arno - Dr Eng
Klein, Oskar - Eng
Birukowa, Mrs (Soviet in Charge of the Instrument Section)
Knoll, Miss Anneliese - Technician
7 Soviets - Names Unknown

OKB-2 Personnel:

None

Department 28: Hydraulics Laboratory (Hydraulik-Laboratorium)

This laboratory also operated for the joint benefit of OKB-1 and OKB-2. They worked with Departments 17a and 20 to conduct tests on hydraulic systems and components.

OKB-1 Personnel:

Keller, Paul - Dipl Eng (Chief)
No Soviet Deputy
Horn, Fritz - Eng
Goernicke, Kurt - Master Mechanic (Meister)
Eltz
Moses, Walter
Tuchel
Boettger, Ernst - Eng
Kunze, Josef
Ulrich, Rudolf - Eng
Stottmeister - Eng
Koenig, Siegfried - Eng
Kube - Eng
Misalla - Eng
Sauerborn
Kramer - Dipl Eng
Mansfeld
14 Soviets - Names Unknown

OKB-2 Personnel:

None

Department 29: Flight Test Engineering (Flugversuchsgruppe)

This group was responsible for scheduling and conducting flight tests and jointly responsible with Aerodynamics, Department 12, for the evaluation of flight test data. After the EF-140/V1 flight tests were completed by the Germans, the functions of the Junkers flight test group were taken over by the Soviets. Schroeter was the only German scheduled to participate in the EF-150 flight test program. The Siebel airplane had not flown under power [redacted] and the OKB-2 Group was still intact.

25X1A

OKB-1 Personnel:

25X1A

Bormann, Alfred - Eng (Chief)
Slutzky (Soviet Deputy; succeeded Klimowitzki in [redacted]

25X1A

Juelge, Paul - Chief Test Pilot
Schroeter, Guenther - Eng (Flight Test Engineer)
Lehmann, Walter - Eng (Flight Test Engineer)
Feodorow (Soviet Colonel and Test Pilot)
5 Germans - Names Unknown
2 Soviets - Names Unknown

OKB-2 Personnel:

Ziese - Dipl Eng (Section Chief and Chief Test Pilot)
Treuter, Karl (Test Pilot)
Motsch (Test Pilot)
Rauschen - Eng
Glocke - Mechanic
Total Number Unknown

 25X1A [redacted]

Department 30: Chemical Laboratory (Chemie-Laboratorium)

This group was primarily concerned with the development of liquid rocket fuels, but also did other chemical research and analysis for both Junkers and Siebel Groups.

OKB-1 Personnel - None

OKB-2 Personnel:

Dunken - Dr Eng (Chief)
Hahn, Walter - Dr Chem
Daniel, Wilhelm - Dr Chem
Janke - Dr Chem
Ruppelt - Dr Chem [redacted] 25X1A
Burmeister - Dr Chem
Emmerich - Chemist
Rudat - Chemist
Keil - Chemist
Steffen - Chemist
11 Soviet Women - Names Unknown

Department 31: Production Chief's Office (Hauptbetreibsleitung)

Responsible for all matters pertaining to Departments 32 through 38. The Production Chief's Office was also concerned with supplying workmen and facilities for Departments 27 through 29 and 40 through 42; but the planning and supervision of the work in these laboratories and the Mockup Shop was done by the design sections directly or by working through the liaison engineers. Quality control (Department 39) was responsible only to the Soviet Air Ministry. German personnel in Quality Control were responsible to the Production Chief on personnel administrative matters.

OKB-1 Personnel:

Dreuse, Otto - Eng (Chief)
Isotow (Soviet Deputy; no other Soviets were in this group)
Ternka, Mrs Hildegard (Secretary)

OKB-2 Personnel:

Schumann, Herbert - Eng (Chief of OKB-2 but under the supervision of Dreuse) (Killed in May 1949)

Department 32: Production Planning Office (Betriebsbuero)

This office was responsible for the scheduling and follow-up of work in the production departments to meet a specified completion date. Work load of both groups were considered in planning, but Hans Schumann had final authority.

OKB-1 Personnel:

Schumann, Hans - Eng (Chief)
No Soviet Deputy
Ternka, Walter - Eng
Horn, Otto - Eng

OKB-2 Personnel:

Naumann, Werner - Eng (Chief)
2 Germans - Names Unknown
8 Soviets - Names Unknown (they worked for both groups)

Department 33: Machine Shop (Mechanische Werkstatt)(Zeche 1)

This group did the machine work necessary for production of airplane parts. All of the machine tools were German, and had been brought from the plants in Dessau and Halle. The Machine Shop did work for both Junkers and Siebel Groups. 25X1A [redacted] for details concerning the equipment which was brought from Dessau and Halle, and which was used in the Machine Shop and in Departments 34, 35, 36, 37, 40, and 41.

OKB-1 Personnel:

Heinrich, Max - Eng (Chief)
Papiaschwilli - Soviet Deputy
Koerner, Karl - Foreman (Obermeister)
Hahn, Otto - Hob Operator (Zahnradfraeser)
Sontag, Martin - Lathe Operator (Dreher)
Gerngross - Master Mechanic (Meister)
Gerngross - Lathe Operator (Dreher)
Schulz - Layout Man (Anreisser)
Voelker - Foreman (Obermeister)
Sonntag - Jig Borer Operator (Bohrwerksdreher)
Skribeck - Layout Man (Anreisser)
Eckler - Lathe Operator (Dreher)
10 Germans - Names Unknown
125 Soviets - Names Unknown (worked for both groups)

OKB-2 Personnel:

Ruffert - Eng (Chief)

Department 34: Equipment Assembly Shop (Schlosserei)(Zeche 2)

This shop built up such things as landing gear, cockpit enclosures (except for the glass), seats, etc, for both groups.

OKB-1 Personnel:

Zang, Robert - Eng (Chief)
Soviet Deputy - Name Unknown
Kuhlmann, Anton - Eng
Dennert
Gollnick
Hille - Foreman (Obermeister)
Schmidt
25X1A Osterland [redacted]
Nickel
Walter, Erich - Foreman in charge of welding (Obermeister)
Nickel (Not a duplication of names)
Mansfeld, Manfred
10 Germans - Names Unknown

OKB-2 Personnel:

4 Germans - Names Unknown
95 Soviets - Names Unknown (worked for both groups)

Department 35: Sheet Metal Shop (Klempnerei)(Zeche 11)

No assembly or riveting work was done here. Formed sheet metal parts were made for both groups.

OKB-1 Personnel:

Kuhnert, Karl - Eng (Chief)
Soviet Deputy - Name Unknown

25X1A [redacted]

Raabe - Master Mechanic (Meister)
Mackenberg
Kammler
Friedrich
Graeberm
12 Germans - Names Unknown

OKB-2 Personnel:

Rudolph, Hans - Foreman (Obermeister)
5 Germans - Names Unknown
41 Soviets - Names Unknown (worked for both groups)

Department 36: Assembly Shop (Endmontage und Grossteilzusammenbau) (Zechen 3 & 5)

In addition to sub-assembly and final assembly, this shop also had electrical, plumbing, spot welding, rivet fabrication, and plastics sections. Final inspection, including functional testing, and final painting was also done here. The engine manufacturer sent engineers to supervise engine installation.

OKB-1 Personnel:

Roehr, Paul - Eng (Chief)
Amaltschemko - Soviet Deputy
Russek, Werner
Hruschka, Paul
Bertel, Albert
Schroeter, Heinz
Pelzer, Josef
Nagel
Kellermann - Quality Control for electrical system
Ungewiss
Martin
Lehmann
Reimann
Zeibig
Schlesiger, Ernst - Foreman (Obermeister)
Schoenemann, Walter - Foreman, electrical
Seidel, Walter - Foreman
Dueben
Moosbach - Quality Control for electrical system
Becker
Hildebrandt - Foreman [redacted] 25X1A
Rudolf
Neffin - Engineer for Plastics Section
Rust, Karl
Richter, Arthur
Albrecht
Zaeper (Master Mechanic) (Meister)
Richter, Horst
16 Germans - Names Unknown

OKB-2 Personnel:

Froehlich - Eng (Chief of OKB-2 Final Assembly; under the supervision of Roehr)
Graeff, Phillip - Eng
11 Germans - Names Unknown
215 Soviets - Names Unknown (Worked for both groups)

Department 37: Tool and Jig Building (Vorrichtungsbau) (Zeche 21)

This shop made the templates, jigs, form blocks and other tools designed by Production Engineering (Department 26) for both Junkers and Siebel Groups. There was no foundry in the plant and not many duplicate parts were made, so that form blocks were usually hand-made of compressed laminated wood, but a few metal form blocks were also hand-made. Tools and fixtures for the machine shop were made by the Machine Shop.

OKB-1 Personnel:

Pfitzke - Eng (Chief)
Soviet Deputy - Name Unknown
65 Soviets - Names Unknown

OKB-2 Personnel:

None

Department 38: Painting, Plating and Heat Treating Shops (Lackiererei und Veredlung) (Zeche 14)

Only Soviet personnel were employed in these shops. Anodizing, as well as plating could be done. Any kind of heat treating required in aircraft work could be accomplished, but there were no facilities for foundry or forge work.

Personnel:

No Germans
45 Soviets - Names Unknown

Department 39: Quality Control (Fertigungspruefung or Feprue)

This department was responsible only to the Soviet Air Ministry. Inspectors made all detail and final inspections on the aircraft and also witnessed tests in the laboratories.

OKB-1 Personnel:

Herzog, Otto - Eng (Chief)
Soviet Deputy - Name Unknown
Werner, Erich - Eng
2 Germans - Names Unknown

OKB-2 Personnel:

2 Germans - Names Unknown
25 Soviets - Names Unknown (worked for both groups)

Department 40: Static Test Laboratory (Bruchversuchs-Laboratorium) (Zeche 16)

This laboratory was responsible for making the test set-up and running the tests in conjunction with Departments 14 and 23. Tests were run for both OKB-1 and OKB-2.

OKB-1 Personnel:

Muttray, Justus - Dipl Eng (Chief)
Soviet Deputy - Name Unknown

 25X1A [redacted]

Hoffmann, Ludwig - [redacted] 25X1A Hoffmann was transferred from Department 29, to succeed Muttray

Gaubatz
Johnen, Cassius - Foreman (Obermeister)
2 Germans - Names Unknown

OKB-2 Personnel:

3 Germans - Names Unknown
18 Soviets - Names Unknown (worked for both groups)

Department 41: Mockup Construction (Attrappenbau) (Zeche 20)

Mockups, mostly of wood, were made by this shop with the aid of the design sections. Workmen were transferred when necessary, but otherwise, the OKB-1 and the OKB-2 Groups were separate in this shop.

OKB-1 Personnel:

Kempe, Albert - Eng
Soviet Deputy - Name Unknown
Koch, Harry - Foreman (Obermeister)
Wenzel
Ediger
5 Germans - Names Unknown

OKB-2 Personnel

Griesshaber - Eng (Chief)
Cornelius - Foreman (Obermeister)
3 Germans - Names Unknown
30 Soviets - Names Unknown (worked for both groups)

Department 42: Flight Testing Ground Crew (Flugversuchsgruppe Bodenorganisation)

OKB-1 and OKB-2 each had a group responsible for the maintenance of their flight test airplanes and the installation of instrumentation, except that engine changes for the Junkers airplanes were made by crews sent out by the engine manufacturer. Since the Siebel Group designed and built their own engines, they did all of their own maintenance work. After the Soviets began their tests on the EF-140, all OKB-1 Germans were transferred out of this section. Richter was transferred to the Technical Liaison Office, Department 4. I have no information on the Soviet organization. 25X1A [redacted] the Siebel plane had not been flown and the OKB-2 Flight Group was still intact.

OKB-1 Personnel:

Richter, Erich - Eng (Chief)

OKB-2 Personnel:

Sczuka - Eng
Total number unknown

Department 43: Drawing Archives and Reproduction (Zeichnungs-ausgabe, Archiv, und Pauserei)

25X1A [redacted]

25X1A This section controlled all non-secret drawings and prints of both groups that had to be locked up at night. It also handled all reproduction except photographic work. [redacted] Lofting (Department 16d), the Photographic Laboratory (Department 44), and this section were combined under the Soviets who had been in charge of the photographic laboratory. Dammann was then transferred to the Aft Fuselage Design Section (Department 15c). When Dammann was in charge, he was responsible to Mindach, Department 6. He was responsible for drawing, storage, and filing; but the actual work was done by personnel from the two groups and OKB-1 and OKB-2 drawings were handled independently of each other. When the Soviets took over, the chain of command was through Isotow, Department 31, and then to the Chief Engineer, Wosnizenski.

OKB-1 Personnel:

Dammann, Paul - Eng (Chief)
Soviet Deputy - Name Unknown
Heydrich, Mrs Ida
Zeressen, Mrs
Zeressen, Anni - Miss
Melber - Mrs

OKB-2 Personnel:

Horn, Mrs
10 Soviets - Names Unknown (worked for both groups)

Department 44: Photographic Laboratory (Photo-Laboratorium)

No Germans were ever permitted to work in this department. The Soviets were very careful about the security of photographs and photographic equipment. This group was responsible only to the Soviets through Isotow to Wosnizenski.

Personnel:

4 Soviets - Names Unknown

Department 45: Flight Testing Procurement Liaison (Im Werk Stationierte)

(Verbindungsgruppe zur Flugversuchsgruppe) (LIC)

This Soviet group expedited the flow of parts and materials between the factory and the flight test fields. They were only responsible to Isotow and Wosnizenski.

Personnel:

Saburdajew (Soviet Chief)
5 Soviets - Names Unknown

Department 46: Garage

This group maintained and operated the vehicles and mechanized equipment used in connection with the plant's operation, and was responsible to Isotow and Birukow.

25X1A [redacted]

Personnel:

Zappe, Wilhelm - Foreman (Obermeister); the only German in the garage

75 Soviets - Names Unknown (35 drivers)

Department 47: Secret Drawing Vault (Geheim Abteilung)

This group (only Soviets were employed here), locked and guarded all secret drawings and prints when not in use (see also 25X1A "Security Measures", Report No [redacted]. This office received all classified mail; even Baade's mail was routed through this and the Plant Director's Office before he received it. Jurschin was an MVD man; hence, not even the Soviet management at Zavod #1 had any authority over this department.

Personnel:

Jurschin - Soviet Chief
4 Soviets - Names Unknown

Department 48: Power Plant Construction (Triebwerksbau OKB-2)

This section of OKB-2 built and tested the Walter-Ofen liquid rocket engines used in the Siebel airplane. (This Siebel plane is described in Report

25X1A OKB-2 Personnel: [redacted] 7

Werner, Fritz - Eng (Chief)
Kosslik - Obermeister
Kilian, Ernst
Janke, Willi
Jahnke, Paul
Naumann, Heinz
Werner, Klaus
4 Germans - Names Unknown

Design Procedures

4. Preliminary Design:

All new designs were originated by the Germans. They told the Soviets what was being planned and asked if they were interested. On all technical matters, Baade made direct contact with the Ministry for Aircraft Industries in Moscow. (This, of course, was done with the knowledge and approval of the Soviet Plant Director.) When the preliminary design drawings and main features of the mockup of a new airplane were completed, Junkers personnel went to Moscow to discuss the plans. Following this conference, a committee of about 20-25 Soviet technicians came to Podberesje to go over the details of the design and to inspect the mockup. This mockup board sometimes included general officers (identified by their striped trousers). All of the members were qualified technical men and not merely politicians. Changes would be suggested and discussed at this meeting. If such changes involved considerable time, the above procedures would be repeated. When the design had been agreed on and approval received from Moscow, the design details were carried out by the Project Engineers, the design sections, and the mockup group. The preliminary design drawings were not made with sufficient detail to be used for detail structural design. However, the basic dimensions were

determined here for the detail design to be done later. The configurations of the landing gear, cockpit, armament, bomb bay, engines, and fuel tanks were also determined when necessary. Detail design engineers assisted the preliminary design section. Mockup construction paralleled the design work.

5. Detail Design:

Air load calculations (Luftkraft Verlauft) were based on wind tunnel data by Dr Strauss (Dept 25). The calculations were made by Preliminary Design (Department 11) working with the Stress Department. Aerodynamics, Department 12, was not concerned with air load calculations. German desk-type electric calculating machines were available in adequate numbers here, as in every department of the plant. The Soviets used the abacus for calculations and were even faster than the Germans with their electrical calculators.

(a) Description

Using the above information, the design engineers would first make an overall layout drawing of their particular section. Other layouts were made for the pertinent sub-sections. From the layouts, detail drawings were made for all parts except standard parts. No dimensions for making individual parts were put on assembly drawings. Assembly drawings were made for all major and sub-assembly sections. Isometrics were not used for production drawings. The layout drawings were available in case the others were not sufficiently clear, but were not issued to the workmen. Wiring and schematic system drawings were also made. Before a project was completed, all drawings were changed so that they were suitable for series production. The engineering sections worked very closely with the mockup section, particularly during the early stages of the design. Although the mockup was not made with sufficient accuracy for tooling purposes, it could be used to work out many design installation problems. With the detail designers' assistance, the mockup was continually reworked to add details as the design progressed. Due to the complexity of plumbing and electrical installations, the first airplane as well as the mockup was used to assist the designers in making up those drawings. In addition to tooling design work, complete tooling drawings which were designed for series production were also made at the plant. The original tooling drawings and twelve sets of prints were transmitted to the Soviets along with the final airplane design drawings. After these drawings had been given to the Soviets and the Germans were occupied with other tasks, the Soviet deputy, Lasarew, would ask questions of Griebsch and Stollberg (Chiefs of Tool Design, Department 26), relative to the tooling drawings. He would pose these questions as if they had just occurred to him, but I believe that someone else may have asked these questions, through Lasarew.

(b) Scale

The scale of a drawing depended upon the size of the part. Full scale and double size drawings were made only for small parts. Standard scales used were: 1:2.5; 1:5; 1:10; 1:25; 1:50; 1:100; and 1:250 for preliminary design drawings.

(c) Accuracy

Production and layout drawings were made accurate enough to permit scaling. If scaling of a print was necessary, the work was usually done by a liaison man. The missing dimension, initials and date were put on the print with India ink and the designer notified of the action, so that he could correct the original. If the shop so requested, the draftsman might have to put the dimension on the print and initial it.

(d) Dimensions

All dimensions were in the metric system. Parts were located by the drawing numbering system. There was no system for locating a part by airplane stations or "water lines".

(e) Numbering System

Example: $\underset{1}{\text{EF140}}\text{-}\underset{2}{\text{052}}\text{-}\underset{3}{\text{0071}}\text{-}\underset{4}{\text{001}}$

(1) Type of airplane
(2) Section of airplane (corresponds to the design section, such as the fuselage center section, fuselage aft section, etc)
(3) Sub-assembly number
(4) Detail part number

If there was a change made, the letter "Z" would precede the section affected. If a change was of such magnitude that it affected the block of numbers second from the left, the work would be stopped until the design was straightened out, but no "Z" would ever be placed in front of this block. When the airplane was completed, serial production drawings were made taking care of all changes. The "Z" would not appear on serial production drawings; otherwise, this same numbering system was used on production drawings as well as for marking parts and assemblies. (Part numbers were put on parts with metal stamps in spite of German recommendations against this). At first the Germans used their own system of indicating part numbers on an assembly drawing. The part would be indicated on the drawing by an arbitrary number which referenced the part number and description in the material block. [redacted] the Soviets changed to their own system of indicating the part -- the part number was enclosed in a circle, and an arrow pointed to the part concerned. Some power plant drawings which I saw at Podberesje but which had been made elsewhere, used the latter system. [redacted] German signatures in Latin script on the title block on some of these drawings, but I cannot remember whether they were on Mikulin or Lulko prints. The signatures were not those of former Junkers employees. Drawings excited considerable interest and many Germans looked at the drawings but did not recognize any names. Preliminary design drawings carried a number which indicated the type and main section (such as fuselage or wing) to which the drawing pertained. Except for the type designation, these drawing numbers bore no relation to the other numbers described above.

25X1A

25X1A

(f) Amount of detail

As regards detail presentation, the German practices were similar to those in the US, except that sectional views were always cross-hatched and drawings were made for each part. Dimensions to be used for part fabrication were not designated on assembly drawings. Rivets were designated by specifying the kind and spacing, but were not drawn individually. Rivets were coded per DIN (Deutsche Industrie Normen) and surface finish was designed according to DIN. On later drawings, information previously covered by DIN was taken from three volumes of Soviet handbooks - Russian Aircraft Materials and Parts (Russische Luftfahrtmaterialien und Zubehoerteile) - the same set of books that contained procurement information. The Soviet method of designating surface finish was the same as DIN. Rivet coding symbols were specified, but were different from those in DIN. The bill of material contained the part number, description, quantity, material, weight, and a column for remarks. Under "Remarks", finish or plating would be specified in addition to being designated on the view of the part. At first, only German was used on the drawing designations, then both Russian and German, and finally only Russian for the EF-150. By the time Russian was used exclusively, the Germans were sufficiently familiar with Russian terms to understand and use them in their work.

(g) Equipment

Pencil drawings were made by the designer. Engineering aids, usually women, would finish the drawing in ink; semi-transparent paper was used. Pencils and paper were scarce. Designers frequently had friends in Germany send them pencils. Drafting tables, machines, and other drawing equipment were taken from Germany; the Soviets did not have any of their own equipment.

6. Handling of Drawings:

(a) Scheduling

The Planning Section (Department 6) assigned and transmitted in writing, completion dates to the design sections and subsections. The design section worked out the sequence of the individual drawings. Bar charts were kept by Planning to show the dates on which assignments were due and the progress which had been made. In actual practice, planning was a great problem. It was complicated by Soviet demands, by the Chief Designer's desire to surpass the Soviet designers, and by the personalities of the people doing the planning. The Soviets would set a date for the completion of an airplane when they gave their approval of the preliminary design. The Scheduling Department, working with the shop production representative and the designers, estimated the amount of time required. Bonin, who directed scheduling, had a good knowledge of plant capabilities. He discussed his calculations with his supervisor, Mindach, (Department 6), who reduced the estimate. Baade, and then the Soviet Plant Director, Baade's superior, each cut the estimate still further before approving it. The approved schedule was then given to the department chiefs by Mindach. As soon as the various departments received the schedules, they protested the inadequate time allotments. The schedule was then discussed by those concerned and finally revised and a more reasonable estimate was made.

(b) Checking and Approval

In Dessau there was a separate section for checking drawings, but due to the lack of personnel in Podberesje, the following system was used: When a drawing was completed, it was

signed in the title block by the draftsman. It was then checked and signed by his immediate supervisor, the group leader, and also signed by the section leader. When the drawing call outs were changed from German to Russian, the Germans signed their names in Russian script at the request of the Soviets. A routing slip was also used for routing and approving one or more drawings. The following people signed the routing slip in the order given:

(1) Draftsman
(2) Group Leader (Draftman's immediate superior)
(3) Chief Section Leader (this would correspond to Hasselloff in the Fuselage Section)
(4) Soviet Deputy to the Chief Section Leader
(5) Stress Analysis (Department 14)
(6) Weight Control (Department 14)
(7) Materials Planning (Department 9)
(8) Production Engineering (Department 26)
(9) Planning Office (Department 6)
(10) Project Engineering (Department 13)
(11) Chief Designer or his Deputy (Department 1)
(12) Soviet Deputy to the Chief Designer (Department 1)

When those indicated above had approved a drawing, it was sent to Reproduction and then filed. There was no other paper work required to release a drawing. Each day all secret drawings, finished or not, were filed in steel boxes, one for each section. The boxes were put into a vault (Department 47); this vault had three locked doors and was guarded. Non-secret drawings that were not finished or that were needed for reference, were locked up in steel cabinets in each design section. Non-secret drawings that were completed were stored in the drawing archives, Department 43.

(c) Reproduction and Distribution of Prints

Three copies were made of each print by the "Rotpause" (red tracing) process for use in Zavod #1. (The prints had red lines on white and smelled of ammonia.) The routing slip (same as above) was then sent to the Production Office (Department 31) to notify them of the availability of the prints and finally sent to the Planning Office (Department 6), where it was filed. One drawing print was sent to the Design Section and two were kept in the print files. Sometimes extra copies could be made upon request, but the number was kept to a minimum due to the severe shortage of paper for printing. Shop foremen sent clerks to the files to get whatever prints were necessary. All prints, except those for individual parts, had to be returned to the files each day for security reasons. Secret prints got the same treatment as that described for secret drawings. Prints on individual parts stayed in the shop with the parts.

7. Design Changes:

The method of handling changes depended upon their magnitude and where the required changes were discovered. Handling these changes was, of course, one of the major functions of the Liaison Engineering Office, but this whole idea appeared to be new to the Soviets. They believed that one man could effectively coordinate design and production operations and saw no reason for a larger staff.

(a) Minor changes, found in the Shop

(1) Minor changes were those that could be worked out between the shop and the liaison engineer without consulting the design section, eg, moving a valve or switch a little to clear a structural member, or replacement of poorly installed rivets. In a change of this type, the liaison engineer would make a sketch of the changes - thereby authorizing the change on the airplane. These changes were recorded in each shop. When the serial production drawings were made, these records were consulted and those changes involving design information were incorporated.

(2) Greater changes were handled by means of a standard change notice form. On the form (or attached to it) was a sketch or description of the proposed change. The change notice was sent from the shop to the Liaison Engineer Office and was then routed in the same manner as were new drawings. Change notices were reproducible and each section on the routing list received a copy. Each department that initiated change notices had a record book and a numbering system to keep a record of the changes that had been made and thereby prevent duplication. There was no limit on the number of changes that could be made before the drawings had to be revised, but there was a date set in the production schedule, after which no changes could be made without Baade's approval. There were four categories of priority for these change notices. No 1 had to be completed in two hours. It was hand-carried by each person. Lower priorities required longer completion times.

(b) Minor changes, found by the Design Section

Changes falling in this category were handled in exactly the same manner as those found in the Shop, except that notices initiated by the designers were routed from the draftsman to the Liaison Engineering Office.

(c) Changes that necessitated drawing revision

The requests for changes requiring drawing revision could originate either from the Shop or Design personnel. If all sections concerned agreed that a new drawing or a revision of the original was necessary, the drafting was done and routed as described for new drawings. The changed drawing would have a "Z" in its number; a change notice form was not used. If very large and time consuming changes were planned, they were usually left for inclusion in the third airplane (V-3). If such changes affected the structural integrity, the static test airplane (V-2) was also modified. Therefore, the V-1 and V-3 airplanes usually differed because of these changes. Part interchangeability was not required at Podberesje.

8. Training:

The German girls who worked as tracers were taught their work in the drafting room by the designers with whom they worked. Soviet girls were taught by the same process; in addition, Soviet engineers instructed these girls three evenings a week. Some political indoctrination was included in these meetings.

Procurement Procedures

9. This section should have been titled "Ordering Procedures" since, for security reasons, that is all the Soviets permitted the Germans to do. All information pertaining to the sources of raw material and parts was carefully kept by the Soviet Purchasing Agent, Orlow. Both German and Soviet materials were used; almost all of the material for the EF-150 and about half that for the EF-140 was Soviet. German material specifications, designations, coding, etc, were handled in accordance with German standards (Deutsche Industrie Normen). Soviet standards were presented in the three volumes, Russian Aircraft Materials and Parts. The copies available to the Germans had the factory name and locations marked out. Although it was customary to refer to a material by number, [redacted] any material designations except one steel, similar to German steel 50.11, which bore the Russian number ХГСА30 (HGSA30). [redacted] any specific tensile strength figures, but in general, [redacted] that the Soviet materials were inferior in strength to the German. Soviet materials were less uniform in their dimensions and physical properties.

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25X1A

10. Materials could not be ordered in less than standard sizes, but were sometimes available in larger sizes. Steel rods were normally six to eight meters long, but could be ordered up to 14 meters in length. Dural tubing was usually available in lengths up to 10 meters, the standard lengths being four to six meters. (Steel and aluminum are still very scarce in the East Zone of Germany; stainless steel is practically non-existent.) Tubing sizes were in both English and metric systems. Metric-sized tubing was used when high stresses were involved because the couplings were better machined, had finer pitch threads, and could withstand more vibration. German ball bearings were used in most applications. As many as possible were salvaged from unused parts made in Germany during World War II. These parts were shipped from Dessau and disassembled in Podberesje. Soviet bearings were very scarce and of poor quality. (The same situation exists today in the East Zone.) Springs were unavailable and had to be made in the Machine Shop. On an average -- about 20-25% of the rivets used were made in the assembly shop. Forgings were very difficult to obtain and were usually of poor quality. Two forgings for the EF-140 V-3 main landing gear bearing pivot were obtained from a plant near Kimry [see Point 15, Report No [redacted]]. These two forgings were well made. Standard extruded shapes could usually be obtained, but special shapes had to be machined. Standard extrusions included:

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(a) Angles: 90° only. A limited number of angles with unequal legs were available, as were some angles with reinforced edges (similar to bulb angles).

(b) Channels: 90° only.

(c) "T" Sections: 90° only.

(d) "Z" Sections: 90° only.

(e) "I" Sections: 90° only.

(f) Hat Sections.

 25X1A [redacted]

11. Actual procurement was initiated by Materials Planning (Department 9) which made up a list from the "materials" block on each drawing and sent the list to the Soviet Purchasing Agent. The Soviets ordered material without any assistance from the Germans. Additional material, not listed on the drawing, could be requisitioned in writing from Materials Planning. All material arrived in trucks and was received by the Soviets; therefore, [redacted] the receiving 25X1A records which were used. When a shipment arrived, Orlow notified Materials Planning of the kind and amount of material which had been received. Quality Control (Department 39) stationed a Soviet at Receiving to inspect the material. Samples were sent to the Materials Testing Laboratory for evaluation of physical properties. Laboratory test reports were sent back to the inspector. If the material was as specified, the inspector saw to it that each item had the proper color coding before sending it to the storeroom. I do not know what system of Soviet coding was used after the middle [redacted] prior 25X1A to that time, coding was done per DIN. If the material was not according to specification, Materials Planning was notified and they took the matter up with the Soviet Purchasing Agent. When 25X1A the material was received, it bore tags which showed material 25X1A specifications and the name of the factory where it had been produced. Since the materials warehouse was closely guarded, [redacted] material. All material was stored in one guarded warehouse and was not tagged for any particular plane or drawing. In each shop, there was a group which originated requisitions from the drawings, obtained the material and delivered it to the work bench or machine. The material was cut to the desired length by the storeroom.

12. The plant at Podberesje was on a telephone exchange not directly connected with the flight testing fields of Ramenskoye, Teplistan, or Sorki. (These three flight testing fields were located in the vicinity of Moscow.) Since telephonic communication was difficult, due to poor service, the following procedure was established to expedite liaison with the plant: If spare parts or material were needed at one of the fields, the flight test crew 25X1A would send a courier plane to Podberesje. The plane would circle the garage and one other building /Point 8, Report No [redacted]7, and then fly to a nearby meadow which was used as a landing field. This "other building" housed a special liaison group known as LIC (Lottnia Espitanja Stanzia or Im Werk Stationierte Verbindungsgruppe zur Flugversuchsgruppe). LIC was composed entirely of Soviet personnel under the direction of Saburdajew. On the arrival of the courier plane, LIC would dispatch one of its men with a truck to the field to find out what was required. Any requests for spare parts or repairs were then brought to the Technical Liaison Office (Department 4) which acted upon the request. After the shop had completed the repair or the warehouse had filled the order, the material was given to LIC, which forwarded it either by truck or plane. During important flight testing, one of the Technical Liaison engineers from Department 4 stayed at the airfield with the flight testing group. If repairs were urgently needed, Goretzki (Department 4) would go with the plane and personally expedite the work through the plant and back to the field.

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Laboratory Procedures

13. Materials Laboratory: (Department 27)

Tests were requested by a design section or by Quality Control (Department 39). Setting up and running of the tests were supervised by a test engineer in the laboratory. Quality Control personnel were in the laboratory at all times and witnessed all tests; occasionally, the design engineer also witnessed his tests. The test engineer in the laboratory wrote up the report and sent it to the section which requested the test. Copies were also made for the Chief Designer and for the laboratory files. There were three sections in the Materials Laboratory.

(a) Chemical Testing

Actually, the function of this section was testing and determining by chemical means, the corrosion resistance of parts. The item to be tested was immersed in an acid or salt bath for a certain length of time. The results of these tests were used to predict durability of a part. This prediction was based on factors taken from tables in German handbooks. This group also worked with the Hydraulics Laboratory (Department 28) to develop a method of sealing integral fuel tanks. No chemical analysis was done here; whenever it was desirable to have items chemically analyzed, they were sent to the Chemical Laboratory of the Siebel Group (Department 30).

(b) Physical Testing

Routine tests were run for Quality Control to measure hardness, tensile strength, fatigue factors, specific gravity, and spring rate. (Springs could not be purchased but had to be made in the shop.) Tests were made to determine the effect of scratches and notches on the performance and durability of parts and to efficiently save damaged parts. Experimental work was also done to establish new and better processing methods for welding, riveting, or other means of joining materials. Microscopic analysis of materials could also be made, but any photography had to be done by the Soviet Photographic Section (Department 44).

(c) Instrument Calibration and Repair 25X1A

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25X1A Since this group was under Soviet control, (Mrs Birukowa, wife of the Administrative Director, was in charge), [redacted] I do know that they only worked on instruments used in the shop and not on those used for aircraft. There was no shortage of gauges except master gauge blocks (Johannsen type) and this was largely due to their "disappearance" from the storage place while being unpacked after shipment from Germany.

14. Hydraulics Laboratory: (Department 28)

Test requests were initiated by Quality Control (Department 39), by the Hydraulics Section of the Power Plant Group (Department 17a), or by the Hydraulic Servo Mechanism Group (Department 20). A research engineer in the laboratory supervised the set-up and testing, and also wrote the report for each test. (Report distribution was the same as described for the Materials Laboratory.) Two Quality Control men were permanently stationed in this lab.

Individual parts could be tested on a hydraulic test bench. For most of the testing, however, a complete and exact mockup of the airplane system was made. Test data were obtained for such things as pressure, temperature, flow rates, pump speed, etc. Equipment and instruments were available in sufficient quantity to control and measure these various factors. Recording equipment included pen and ink recorders and three four-channel 20-cm oscillographs. The frequency response of the oscillographs is not known to me. [redacted] two kinds of hydraulic fluids - one colored green and the other red. The green fluid was most commonly used. I am positive that it remained fluid at minus 55° C. Both kinds of fluid were received in barrels and did not require further mixing; therefore, I have no knowledge as to their ingredients. These hydraulic fluids were harmful to the hands of the personnel working with them; those working with the fluids had to wear rubber boots and gloves and in time, the boots and gloves were affected. [redacted] any trouble with air- craft parts due to using these fluids. (Packings were made of special compounds of synthetic rubber or metal including lead in some cases.) Tests were also run to test the effectiveness of the fuel tank sealing compounds developed by the Materials Laboratory. Tanks were tested by rocking them, while filled with water and under pressure. Slosh tests were also run with the tanks half and three-fourths full, but not pressurized.

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15. Static Test Laboratory; (Departments 23 and 40)

I have been told that this was the only factory in the USSR that had its own static test laboratory. Other plants sent parts and complete airplanes to ZAGI in Moscow for testing. Facilities at Zavod #1 were not adequate for testing a completely assembled airplane, but tests were made on all major sections.

(a) Static test requests originated in the Stress Group (Department 14). The requests were sent to Static Test Design (Department 23) where the jigs and test setups were designed and drawn up. The research engineer from Department 23 also approved the completed setup, supervised testing, and wrote the report. The fabrication and actual setting up for the tests was done by the Static Test Laboratory (Department 40).

(b) To facilitate the mounting of the test specimen and the hydraulic loading cylinders, there was a grill work of I-beams, approximately 8 x 16 meters, imbedded in the concrete floor of the laboratory. The test specimen was mounted on a vertical steel structure built up from the grill in the floor. All loads were applied by means of hydraulic cylinders. No shot bags or weights of any kind were used to apply loads. Load attachment points on flight surfaces consisted of contoured metal plates and rubber pads cemented to the skin. Whiffeltree linkages were made up to connect the attachment points with the loading cylinders bolted to the grill in the floor. If upward loads had to be applied to the top surface of the test specimen, pulley and cable systems were made up to carry the forces from the cylinders to the points of application. The setup was operated from a central control panel, with one man required for each loading cylinder valve. Loads were applied in increments of 10% of the "design loading". Tests would usually be continued to failure, which was required to be 125% of the "Design loading". "Design loading" was 120% of the expected flight loads.

(c) The Soviets specified certain parts which they wanted to test at ZAGI just before static tests were to be run. The Germans tested these parts by loading them only to the "Design load". They were then completely inspected by Quality Control and, if satisfactory, were sent to ZAGI for testing to failure. The test setup at ZAGI was made by Junkers personnel. The tests were run by ZAGI personnel in the presence of Junkers engineers. Since the EF-131 tests had been practically completed in Dessau, a new wing was made and sent to ZAGI. On the EF-140, one wing and the complete fuselage was tested by ZAGI. I believe that all of the EF-150 tests were to be run to failure at Zavod #1. /See Report No [redacted] for a description of these aircraft./ Bending fatigue tests on wing spars and torsional fatigue tests on the flight surface control linkage were also run. By using a standard drop hammer machine, simulated drop tests were made on landing gear; but the entire airplane could not be picked up and dropped.

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(d) The Static Test Laboratory also worked with Stiller (of Department 15a), in conducting tests on upward firing crew ejection seats. Tests were not run on the downward ejection seat used in the EF-150. Tests were made from a stand built for this purpose. No tests were made from an airplane or simulated aircraft structure. The seats used in the airplanes built at Podberesje were the same as those built by Junkers and all other German aircraft companies during World War II. All seats were adjustable by mechanical means, both up and down and fore and aft. Ejection was accomplished by four powder charges simultaneously fired by means of electrical primers. There was also an emergency hydraulic ejection system. Maximum "g" loading for the upward-firing seats was, I believe, 8 gs; for the downward firing seats, it was 3.5. During the tests on the test stand which I saw, the upward-firing seats went 16m above their starting point. The angle of ejection for all aircraft seats was 8° aft for those that were fired upward and 8° forward for those ejected downward. Stiller expressed his personal belief that the seats in the EF-150 wouldn't clear the tail at the higher speeds obtainable by that airplane. Canopies were also jettisoned by means of powder charges and were designed to clear the tail when ejected. Two operations were required in firing the seat. One to unlock the trigger and the other to actually fire the seat. The trigger was a lever with a scissors-type grip located on the side of the right-hand arm rest. The occupant had to squeeze the grip to unlock the lever and then pulled the lever to fire the charge. The lever had to be pulled with sufficient force to break a piece of wire installed and sealed with lead as an added safety feature.

(e) Cabin pressurization tests were also made by this laboratory. Structural proof tests were run on the V-2 airplanes. Leakage tests were also made on the V-1 and V-3 airplanes. For safety reasons, water was generally used to test the V-2 structures. Air pressure was used on the EF-150, V-2, however, since they could tolerate more leakage when using air than when water was used and thereby save much of the time usually required to plug up holes.

16. Vibration and Flutter Testing: (Department 24)

Test requests were originated by Section 14, Stress and Weight Control. Analysis of data was made by both laboratory and stress men working together. The report was written by the

test engineer and approved by the Stress Section. All airplanes to be flown received a thorough vibration and flutter test (shake test) that lasted three or four days. The airplane undergoing tests rested on its landing gear and was vibrated by means of electrically-driven mechanical shakers. Frequency and amplitude were recorded on strips of paper moving at known speeds. The recorder and pickup were in one small unit called a "Schwingungstastschreiber". The pickup consisted of a sliding probe extending out of the box of the recorder. When taking data, the unit was held by hand with the probe against the airplane structure. After testing, the airplane was thoroughly inspected by Quality Control. This group also worked with the Static Test Laboratory on various life tests such as on the flight control linkages. In this test, the complete control system was duplicated in the laboratory. When necessary, they also worked with Flight Test on vibration studies.

17. Siebel Chemical Laboratory: (Department 30)

This group was primarily concerned with the development of liquid rocket fuels. They experimented with various mixtures of the "T and C Stoff" used in the Walter Ofens for the Siebel airplanes. Although they did much chemical research and analysis for both Siebel and Junkers, the only other program which I knew about dealt with corrosion resistance tests on fuel tanks for liquid rocket engines.

Shop Procedures

18. The factory worked three eight-hour shifts daily. All of the shops did work for both Junkers and Siebel Groups. Siebel had only one shop and that was for building liquid rocket engines (Walter-Ofen). The Siebel plane was assembled in a section of the final assembly shop, Department 36. The machine tools were all of German make and had been taken from Junkers/Dessau, and Siebel/Halle. There were no special training courses for machinists; Soviet workers received on-the-job training and were considered "specialists" after six-eight weeks.

19. Planning was handled in much the same way as it was in the design section. The Production Planning Office (Department 32) scheduled the time when an assembly was to be completed and it was up to each shop to work out the details. Since both OKB-1 (Junkers) and OKB-2 (Siebel) used the same shop and laboratory facilities, planning was a joint operation. Shop planning personnel coordinated with the engineering planners in working out an overall schedule. The question of priorities between the two groups was not serious; it was nearly always settled in the shop where parts were being made. A process routing card was made by every department for each part. This card had the part number, name, machining or other operations required, the standard time allowed for each step (except inspection), a space for the actual time used, and another space for the Quality Control stamp. When the routing card had been prepared, the card, print, and the material were placed in a room where they could be obtained by the workman. On completion, the part, drawing, and the card were put in another room for inspection. After the part left the shop, the card was routed back to the Production Planning Office (Department 32), where it was used for inventory control records. The card remained in this office. The method of handling payroll cards is not known, but it was done by a Soviet in the Production Planning Office. There were timekeepers in each shop; there were also timeclocks - four in the shop, one for Junkers engineers and one for Siebel engineers. The only other records used were the books that were kept in each shop to record changes made on parts for the airplane.

[redacted]

20. Since Zavod #1 was a development plant, there was no series production and consequently no assembly line techniques were used. The description that follows does not indicate any sequence of operation, but is simply given shop by shop:

(a) Machine Shop: (Department 33)

Each section of the machine shop had one or two men (Anreisser) who did part layout work. The machines were set up by the German machine operators themselves. The Soviet operators set up their machines under the supervision of the foreman (Obermeister) or the lead-man (Vorarbeiter). Special extruded shapes usually had to be machined. Forgings were also hard to get and, where possible, welded assemblies or machined parts were used. Coil springs had to be made on lathes. Tungsten carbide tools were used until the supply taken from Dessau was exhausted; they were not available in the USSR.

(b) Equipment Assembly: (Department 34)

This shop used the same system of laying out parts as described above for the machine shop. Welding fixtures were made up and used to hold assemblies while welding them together. These fixtures were designed by the Tool Design Section (Department 26) and built in the Tool and Jig Building Section (Department 37). Welded assemblies were heat-treated to relieve stresses set up by welding. When necessary, welded assemblies were also heat-treated to increase their strength.

(c) Sheet Metal Shop: (Department 35)

Layout work was accomplished as described above. Lay-out men, with the help of the foremen, computed the set-back allowances. Kuhnert, the Department Chief, was never able to take more than three days vacation at a time because the Soviet workers did not understand the work and he always had to plan their assignments prior to his leaving. Some parts were formed out of full hard aluminum alloys and others were made of annealed aluminum and later heat-treated, depending on the degree of forming involved. Sheet metal forming was practically all done by hand. This was largely due to the fact that only one to three pieces of each part were made. The tool designers (Department 26) however, did make up complete tooling drawings for series production. The dies and form blocks that were used at Podberesje were hand-made of laminated compressed wood and occasionally of metal. Metal form blocks were also hand made of steel since there was no foundry. The laminated wood came from Dessau and could not be obtained in the USSR. Rubber pillows were used in forming parts on hydraulic presses. No stretch presses were available in Podberesje. Stretch presses had been taken from Dessau by the Soviets but their present whereabouts is not known to me.

(d) Assembly Shop: (Department 36)

Wing, empennage, and fuselage jigs were made to hold ribs, formers, and other structural members during sub-assembly. Rivet holes were located by measuring and marking of the part itself. Hole patterns were laid out by lead men or group leaders.

(1) Most of the assembly work was accomplished by means of dural rivets, including age-hardening ("ice-box") rivets. Mild steel rivets were also used. The only blind rivets used were the explosive type, and these very infrequently. Bolts and nuts were not used for permanent assembly of structure. Small screws were used temporarily to hold parts together while riveting. Spot-welding was used extensively for tank construction and for engine cowling and air intake ducts. Spot welding was of good quality and no unusual amount of trouble was encountered. Rubber was attached to steel by cementing, but no metal-to-metal cementing processes were used.

(2) For final assembly, jigs were permanently attached to the floor and used to locate the various sub-assemblies with respect to each other. Electrical, hydraulic, and other equipment was installed during final assembly. Electrical, hydraulic, and fuel systems were installed with the aid of schematic drawings. Detailed drawings were not made up for plumbing and wiring until after they were installed in the first airplane. Power plants were installed under the supervision of engineers from the engine plants. All engine adjustments were accomplished by these engineers alone. Engine changes made during the flight test program of the EF-140 were done by a Mikulin crew. A Mikulin engineer also went along on test flights.

(3) Control surfaces, landing gear, armament, fuel, and hydraulic systems were given a functional check by means of various test stands in final assembly and approved by final inspection (Endkontrolle). Weight and balance, with the airplane empty, was also determined here. No gun firing tests were conducted. Wing and fuselage surfaces were inspected by means of a device which recorded the variations between the desired contour and the actual contour on a strip of paper. If the contour was too uneven, the roughness was filled in with a material similar to a paint primer and hand-smoothed. This was a procedure which had been done in Dessau and was continued in Podberesje. Junkers engineers were in favor of discarding painting, but the Soviets wanted to continue it. I have no knowledge as to whether the EF-150 was to be painted or not. [redacted] some MIG-15s 25X1A
25X1A in Dessau [redacted] were not painted. They arrived in Dessau in 25X1A
[redacted] and were still there [redacted] Airplanes 25X1A
were painted light blue with red star insignia in eight places. No lettering or numbering was put on the planes. Wings were taken off the completed airplane in order to get it through the shop doors. After the airplane was rolled outside, the wings were again attached. Engine tests were run and the electrical, fuel, landing gear, armament, and hydraulic systems were again tested using the plane's own power instead of the test stands.

(4) The airplane was again disassembled for shipment to the flight testing field. Wings, power plants, landing gear, and horizontal stabilizer were removed. Landing flaps and ailerons were shipped separate from the wings. They were then brought to Ramenskoye and Teplistan by truck, except for EF-140-B (V-3) which was transported by ship to Sorki. The airplanes were dispatched to Ramenskoye or Teplistan, arrived in Moscow by nightfall, and were transported through the city. We were told this was done so as not to interfere with traffic. The airplane was then reassembled at the airfield under the supervision of Paul Roehr, Chief of Department 36.

25X1A [redacted]

(e) Painting, Plating and Heat Treating: (Department 38)

Only Soviet personnel regularly worked in these shops; occasionally, when an especially difficult job of heat treating had to be done, German engineers were called upon to do it. All painting and plating was done without paint booths or facilities for getting rid of the fumes; the Soviet painters did not even wear masks. All of the necessary equipment was available and the Germans offered to set it up but the Soviets said it was unnecessary. Smoking was forbidden in the paint shop, but a real fire hazard existed in that the doors in the shop which led to the plating room were kept open where electrical equipment was used. Because of the fumes, final painting of the airplane was done at night in the Assembly Shop, Department 36.

(f) Siebel Power Plant Construction and Testing: (Department 48)

OKB-2 built six liquid rocket engines (Walther-Ofen). Three were built with one burner and three with two burners. Two of each were to be used in the Siebel experiment fighter and one of each was for testing on a stand. These engines were built in a section of the assembly shop (Department 36) [redacted] 25X1A their design and construction. [redacted] sharp-cornered steel boxes with exhaust tubes extending out of one side. These boxes measured about 100 x 70 x 70 cm. [redacted] no idea what was inside them. The exhaust tubes were about 30 cm in diameter and 5 m long. The one-burner engine had one of these tubes extending out of the 100 x 70 cm face of the box. The two-burner model had two of these tubes in the same location. [redacted] the materials used were all taken from the former Siebel Plant in Halle.

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ENCLOSURE (A) Soviet Supervision of Zavod #1

ENCLOSURE (B) Organization Chart of Zavod #1

 25X1A [redacted]

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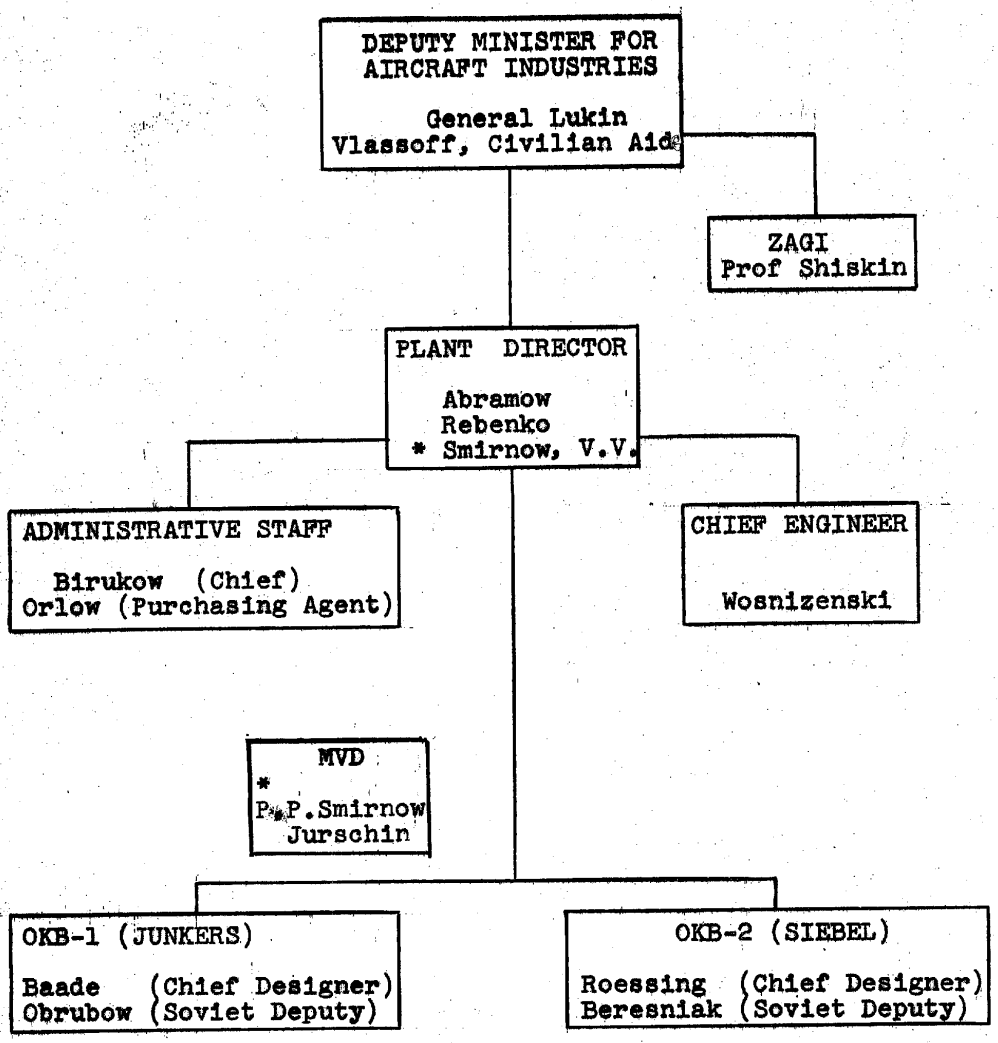

25X1A ENCLOSURE (A):
to Report No [redacted]

Chart Showing Soviet Supervision of

Zavod #1 25X1A

/* V V Smirnow has, in error, occasionally been referred to as P P Smirnow in previously disseminated [redacted]
You will note that these are two individuals./

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